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ABSTRACT

AmeriCorps is a national initiative that involves citizens in strengthening America's communities through community service. This document presents findings of a cost-benefit analysis of two AmeriCorps programs in Washington State--the Hoquiam Project and the Lake Chelan Project. In calculating annual costs, the study included both federal dollars invested and matched funds contributed by grantees. Costs occur locally in three major categories--participant support, staff costs, and operational costs. Benefits were divided into two types--those provided to the community, and those provided to AmeriCorps members. Findings indicate that the average benefit-and-cost ratios across the two projects were 2.4-to-1 at a 2 percent discount rate and 1.8-to-1 at a 5 percent discount rate. In other words, for every dollar (federal and matched) spent on the AmeriCorps projects, $2.40 could be expected in return at a 2 percent discount rate, and $1.80 at a 5 percent rate. Although many of the benefits could not be measured in dollars, the monetary benefits substantially exceeded costs. Further funding of the projects is recommended. However, other evaluation strategies should be used to evaluate AmeriCorps projects, including case studies, formative evaluations, and summative evaluations. Seven tables are included. The appendix explains calculation procedures. (Contains 11 references.) (LMI)

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ED 387 886

The Northwest Regional Educational Laboratory

RESEARCH REPORT

COST-AND-BENEFIT STUDY OF TWO AMERICORPS PROJECTS IN THE STATE OF WASHINGTON

August 1995

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A COST-AND-BENEFIT STUDY OF TWO AMERICORPS PROJECTS IN THE STATE OF WASHINGTON

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Submitted by

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August 1995

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Staff at the Northwest Regional Educational Laboratory express their appreciation to the Washington State Commission for National and Community Service for inviting us to field test a cost-benefit study of two AmeriCorps project in Washington. Bill Basl, executive director of the Washington Commission, was extremely generous with his time and advice in guiding our study and providing us access to information

The authors of this study—Changhua Wang, Tom Owens, and Kyung-Sup Kim—thank our expert consultants, Dr. Anthony Rufolo of Portland State University and Dr. William Zumeta of the University of Washington, for their input into the study design and review of the report draft. We also appreciate the advice and reactions of our advisory committee consisting of Mary Blake, AmeriCorps executive director from Montana; Marlis Miller, Oregon executive director; Judy Ouderkirk, Idaho executive director; and Bob Rath, Steve Funk-Tracy, Nancy Henry, Kim Yap, and Larry McClure of NWREL for their help in designing the study

The collection of data for this study would not have been possible without the enthusiastic support of the project-level AmeriCorps site directors and staff: Lesley Van Over from Lake Chelan School District, and Tonya Bowers and Tracy Wood from Hoquiam.

This cost-benefit study was influenced by the research methodology used in a recent AmeriCorps cost-benefit study conducted by George Neumann, Robert Tamura, Roger Kormendi, and Cyrus Gardner (1995). George Neumann was very helpful in telephone discussions of their study and in providing us with a copy of their working draft.

And finally, thanks to Nancy Henry and Dennis Wakeland for editing the report, and to Steve Funk-Tracy for his invaluable work with the statistical data.

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EXECUTIVE SUMMARY

In April 1995 the Washington State Commission for National and Community Service requested that the Northwest Regional Educational Laboratory (NWREL) conduct a cost-benefit study of two Washington AmeriCorps projects. The purposes of the study are two-fold:

1. to demonstrate the monetary returns on the investment in two AmeriCorps projects through a cost-benefit analysis
2. to explore the issues involved in a cost-benefit analysis of such projects for use in designing future studies

AmeriCorps is a new national initiative that involves people of all ages and backgrounds in strengthening America's communities through service. Currently, over 20,000 AmeriCorps Members have served full or part time in more than 350 AmeriCorps programs nationwide.

AmeriCorps programs are as diverse as the communities they serve, but they are united by a common mission:

- *Getting things done* to help communities meet their education, public safety, human, and environmental needs.
- *Strengthening communities* by bringing together individual Corps Members from all backgrounds to solve problems at the local level.
- *Encouraging responsibility* through service and civic education.
- *Expanding opportunity* for individual Members by helping make postsecondary education more affordable.

In 1994–95, Washington state had more than 20 AmeriCorps programs involving nearly 800 Members in environmental, public service, human needs, and public safety efforts. The state's largest single program is Washington AmeriCorps, a multi-site program administered through Washington Service Corps in partnership with 14 local sponsor agencies across the state. The two projects selected for this study, the Hoquiam Project and the Lake Chelan Project, are part of Washington AmeriCorps.

Issues and Concerns

A cost-benefit analysis tries to identify and measure comprehensively the costs and benefits of a program, and then to calculate the ratio of benefits to costs. The process relies on expressing both costs and benefits in monetary terms. Costs are usually relatively easy to

identify and measure. Unfortunately, programs meeting human needs have many benefits that are difficult to represent in dollars. Assigning monetary values to increased community collaborations or member teamwork skills, for example, may be next to impossible. Because of this, some benefits must be ignored in developing a cost-benefit model.

In addition, benefits to one group of individuals (for example, stipends for Corps Members) are costs to another group (the AmeriCorps program). Therefore, it is important to clarify the perspective from which costs and benefits are defined. In defining benefits, this study limits itself to the value of output that might not have occurred without AmeriCorps involvement.

Methodology

Together with consultants Dr. William Zumeta of the University of Washington and Dr. Anthony Rufolo of Portland State University, NWREL researchers reviewed other studies, including a recent cost-benefit analysis of three AmeriCorps projects conducted by Neumann et al. (1995). We adopted some of their methods in measuring costs and benefits, although with some significant modifications.

Two Projects Selected

Deciding to field test a cost-benefit study model in April 1995 allowed little time to plan or collect new data. We therefore chose to conduct a pilot study that would provide preliminary information based on data from two very different programs. This pilot study would lay the groundwork for a more comprehensive model to use in future years.

Two Washington AmeriCorps projects were selected for the study: one at Lake Chelan School District and one at the City of Hoquiam. The Lake Chelan Project focuses on school success, while the Hoquiam Project addresses community needs.

Lake Chelan Project

Fifteen AmeriCorps Members (five full-time, 10 part-time) have spent approximately 400 hours each week since October 1994 working with students in Chelan School District. Members tutor students in reading during the day in regular classes and at night work with English as a Second Language students. Members keep the school library open at lunch time, assist in woodshop and photography classes, and help with the Readiness to Learn and WIC (Women Infant and Children) programs. After school, they provide student-enrichment activities in such areas as science, mathematics, drama, Spanish, quilting, book making, poetry writing, drawing, cooking, and physical education.

Hoquiam Project

Since October 1994, 14 AmeriCorps Members (12 full-time, two part-time) have worked closely with City of Hoquiam staff on three main projects: renovation of the Hoquiam Stadium, construction of a children's playground, and creation of the Hoquiam Farmers Market, which the city's mayor feels would not have been completed without AmeriCorps involvement. The market, located in a 3,024 square-foot building and managed by the Grays Harbor Farmers Market Association, opened in April 1995 and hosts vendors such as bakers, artisans, and gardeners who pay rent to the city based on a percentage of sales. The city views the AmeriCorps work as a way to revitalize Hoquiam's riverfront area and bring new resources into the area.

Measuring Costs

In calculating annual costs, this study includes both federal dollars invested (including education awards), and matched funds contributed by grantees.

Costs occur locally in three major categories:

- Participant support (stipends and fringe benefits, training, education, and educational awards received by AmeriCorps Members)
- Staff costs (for project directors' and their assistants' salaries, fringe benefits, and training)
- Operational costs (for travel, supplies and administration)

In addition, overhead costs from Washington AmeriCorps are allocated to the two projects in this study.

Measuring Benefits

We divided the benefits measured in this study into two types: benefits to the community and benefits to AmeriCorps Members. We include only those benefits that are measurable in dollars or can reasonably be expected with support of available data, and that would be unlikely to happen without AmeriCorps participation.

Benefits to the Community

Benefits to the community can vary among projects. For that reason, we chose to focus on the three benefit areas that are applicable to both projects.

1. The direct service provided by AmeriCorps Members through their work
2. The value of Members' commitment to future volunteerism

3. The value of non-AmeriCorps volunteers' time generated by AmeriCorps activities

Benefits to Members

Many benefits AmeriCorps Members acquire, such as teamwork skills and good-citizenship skills, may be obvious to the Members and society, but are difficult to measure in dollars and so have been ignored in this study's calculations. Other benefits in this category include time- and conflict-management skills, planning and assessment skills, communication skills, skills in working with remedial students, and improved self-esteem.

Thus only the value of Members' future education, assisted through the post-service education award, has been included in this study as a measurable benefit.

Findings

In conducting this study, it was necessary to determine how a dollar spent on the projects would compare to a dollar invested in an interest-bearing account. We used both a 2 percent discount rate (the real rate of return beyond inflation) and, for balance, a more conservative 5 percent discount rate. Thus the money invested in an AmeriCorps project is compared to money invested in an account paying 2 percent and 5 percent over a fixed number of years.

Using this approach, we found that the average benefit-and-cost ratios across the two projects are 2.4-to-1 at a 2 percent discount rate and 1.8-to-1 at a 5 percent. In other words, *for every dollar (federal and matched) spent on these AmeriCorps projects, $2.40 can be expected in return at a 2 percent discount rate, and $1.80 at a 5 percent.*

Conclusion and Recommendations

Despite the fact that many of the benefits of these two projects cannot be measured in dollars and have been ignored in this study's calculations, the monetary benefits were still found to substantially exceed costs. Based on the favorable benefit-to-cost ratios resulting from this conservative analysis, we feel these projects deserve continued funding and support.

We also believe a cost-benefit analysis is only one of many strategies that should be used in evaluating AmeriCorps projects. Its reliance on dollar values prevents this strategy from showing many important short- and long-term outcomes. Other strategies—describing and analyzing programs through case studies, a formative evaluation to determine ways to improve programs, and summative evaluations to determine how well programs meet their objectives and impact Corps Members and the communities they serve—would provide

staff, funders, and interested community members with a more complete picture of the programs and their accomplishments.

For next year, we recommend that assumptions and methodologies developed in this study be expanded to cost-benefit studies of other AmeriCorps projects. Studies might be done of a sample of each of four types of AmeriCorps projects as one part of a more comprehensive evaluation. We also recommend a follow-up study to test some of the assumptions made in this pilot study regarding the percentage of Members who actually enroll in education and continue in volunteer service after completing their AmeriCorps one year commitment.

INTRODUCTION

AmeriCorps is a new national initiative that involves people of all ages and backgrounds in strengthening America's communities through service. Currently, over 20,000 AmeriCorps members serve full or part time in more than 350 AmeriCorps programs nationwide.

AmeriCorps programs are as diverse as the communities they serve, but they are united by a common mission

- *Getting Things Done* to help communities meet their education, public safety, human and environmental needs.
- *Strengthening Communities* by bringing together individual Members from all backgrounds to solve problems at the local level
- *Encouraging Responsibilities* through service and civic education.
- *Expanding Opportunity* for individual Members by helping make postsecondary education more affordable

In 1994–95, Washington state has more than 20 AmeriCorps programs involving nearly 800 AmeriCorps Members in environmental, public service, human needs, and public safety efforts. The state's largest single program is Washington AmeriCorps, a multi-site program administered through Washington Service Corps, in partnership with 14 local sponsor agencies across the state. The two projects selected for this study, the Hoquiam Project and the Lake Chelan Project, are part of Washington AmeriCorps.

The purposes of this study are 1) to demonstrate the monetary returns of the investment in these two projects through a cost-benefit analysis, and 2) to explore issues of cost-benefit analysis of such programs in order to develop a more complete model that can be used for designing future studies.

ISSUES AND CONCERNS REGARDING A COST-AND-BENEFIT ANALYSIS

The fundamental idea of a cost-benefit analysis is to comprehensively identify and measure the costs and benefits of a program and to calculate the ratio of program benefits to costs However, applying this idea to real social programs is often limited by the inability to quantify many of the benefits observed, such as increased collaboration of community groups or increased teamwork skills developed in Members.

Costs are usually relatively easy to identify and measure. When it comes to the question of costs to whom, some arbitrary definitions are needed. For example, stipends to Members are costs to an AmeriCorps project but are certainly take-home income and therefore benefits for individual Members.

Measuring benefits of a social program in dollars is more difficult and has to be based on certain assumptions. When measuring benefits, we have to state a perspective from which we are trying to define benefits. As already seen, benefits to one group of individuals could be costs to another group. In defining benefits, this study limits itself to the value of output that might not have occurred without AmeriCorps involvement.

METHODOLOGY

To measure the real return of investment in a cost-benefit analysis, discount rates are used to calculate the value of today's dollars in the future. The discount rate is nothing more than the rate by which the present value of money received in the future can be computed (Gramlich 1981). A dollar received *now* can be invested and will be worth more than a dollar received in the future. A project which seems to yield substantial net benefits when evaluated at a 2 percent rate may well appear cost ineffective if the rate is 5 percent. For balance, NWREL researchers used both rates, resulting in a range of return from more conservative to less.*

Together with our consultants, Dr. William Zumeta of the University of Washington and Dr. Anthony Rufolo of Portland State University, NWREL researchers carefully reviewed other studies, including a recent cost-benefit analysis of three AmeriCorps projects conducted by Neumann et al. (1995), and have adopted their methods in measuring costs and benefits with some significant modifications. Compared with the Neumann et al. study, this study is different in two aspects:

1. Use of Two Different Discount Rates

We used a 2 percent (low discount) rate and 5 percent (high discount) rate throughout our study in estimating costs and benefits, whereas the Neumann study used only the less conservative 2 percent rate.

2. Inclusion of Local Matched Funds and Overhead Costs at the State Level

In calculating a cost-benefit ratio we include as costs not only federal expenditures but also all local matched funds. We also allocated overhead costs at the state-level to the local projects. The Neumann study only included federal expenditures when calculating cost-and-benefit ratios.

In addition to the above differences, we made numerous adjustments in our calculations to best estimate costs and benefits. Our overall approach in this study is conservative. We measure all costs that are projected for a one-year cycle and count only those benefits that

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* Based on Pindyck and Rubinfeld's (1995) discussion of using the risk-free rate of return to discount future benefits and costs, the Neumann et al. (1995) study used only the 2 percent discount rate in estimating benefits and costs. They footnoted in their report that the 2 percent discount rate is the difference between inflation and the Government one-year Treasury bill rate over the past 30 years.

The current study used two discount rates, 2 percent and 5 percent. These rates were selected by NWREL researchers based on Zerbe's (1991) study, in which he stated that real rates from 2.5 to 5.0 percent seem to cover the range of real rates that should be used to discount public benefits and costs.

can be reasonably expected and expressed in terms of their dollar value. Because of the short time of each project's operation, the data needed to measure some of the benefits were not available. For example, in Lake Chelan, one on one tutoring provided by Members will certainly have an impact on at-risk students. However, we do not have data to prove how much present and future impact tutoring has on these students and in what ways. Also some benefits produced by these projects for Members and society are difficult to measure in dollars. While we do have accurate program costs, we realize we have *under*valued the future benefits of these two projects based on their first year of operation

SELECTION OF TWO PROJECTS FOR THIS STUDY

Deciding to field test a cost-benefit study in April 1995 allowed little time to plan or to collect new data. We chose to produce a pilot study that provides preliminary information based on data from two very different programs. The pilot study lays the groundwork for a more comprehensive model to use in future years.

Two Washington AmeriCorps sites were selected: a project at Lake Chelan School District and one at the City of Hoquiam. The Lake Chelan Project focuses on school success; while the Hoquiam Project addresses community needs.

Lake Chelan Project

Fifteen Members (five full-time and 10 part-time) have spent approximately 400 hours each week since October 1994 working with students in Chelan School District. Members tutor students in reading during the day in regular classes and at night work with English as a Second Language students. Members keep the school library open at lunch time, assist in woodshop and photography classes, and help with the Readiness to Learn and WIC (Women Infant and Children) program. After school, Members provide student-enrichment activities to students in such areas as science, mathematics, drama, Spanish, quilting, book making, poetry writing, drawing, cooking, and physical education. Members have also been heavily involved in recruiting and organizing adult volunteers to help the schools.

Hoquiam Project

Since October 1994, 14 Members (12 full-time and two part-time) have worked closely with the City of Hoquiam staff on three main projects: renovation of the Hoquiam Stadium, construction of a children's playground, and creation of the Hoquiam Farmers' Market, which the city's major feels would not have been completed without AmeriCorps involvement.

The Hoquiam Farmers' Market is a 3,024 square foot building, fully walled, with an overhang in front. Managed by the Grays Harbor Farmers' Market Association, the market opened in April 1995, and hosts vendors such as bakers, artisans, and gardeners who pay rent to the city based on a percentage of sales. The city views the AmeriCorps work as a way to revitalize Hoquiam's riverfront area and bring new resources into the area.

The Hoquiam Stadium was originally built with the help of the Civilian Conservation Corps (CCC), the first large-scale national service program, during the Depression. After many years of use with minimum maintenance work, the stadium needed renovation in various areas. AmeriCorps' timely help, as the mayor of the city commented, "symbolizes

the continuation of the volunteer spirit of this country." The economic impact as well as the emotional impact this stadium could have on Hoquiam is enormous in her opinion

Members at Hoquiam are also helping build a children's playground with toys donated by private businesses. This playground, when completed, will provide a safe place for children and their parents and it will also serve as a gathering place in the community

In addition to the three major projects described above, Hoquiam Members have been doing various small projects such as boarding up the old train station and helping construct a concession stand at John Gable Park at Hoquiam. Members have also engaged in various after-school enrichment programs for local secondary school students

MEASURING BENEFITS

We divide the benefits measured in this study into two types: benefits to the community and benefits to Members. We include only those benefits that are measurable in dollars or can reasonably be expected with support of available data and would be unlikely to happen without AmeriCorps.

Measuring Benefits to the Community

Benefits to the community vary among projects. We chose to focus on the following three benefit areas applicable to both projects:

- The direct service provided by Members through their work
- The value of Members' commitment to future volunteerism
- The value of non-Corps Member volunteer time generated by AmeriCorps activities

Lake Chelan. Using minimum required hours Members work per year, five full-time and 10 part-time Members at Lake Chelan will serve at least 21,500 hours in one year. According to the quarterly reports provided by the Lake Chelan Project, in the first three quarters, Members at Lake Chelan served a total of 15,597 hours. Fifty-seven percent of these hours were dedicated to one-on-one instruction and tutoring, 25 percent to community strengthening activities, and 18 percent in membership development or meetings. If we consider this 18 percent as "non-productive" time (in the sense they are not hours of direct service to clients) and the rest of the time as productive, Members will serve 17,630 productive hours (82 percent of 21,500 hours) within one year.

If these productive hours of work were performed by teacher's aides whose hourly wage is $8.50, it would cost Chelan School District $149,855 (17,630 hours × $8.50). School administrators told us that they could not afford extra hours for teacher's aides. Teachers also told us that instructional assistance provided by Members differs from that of teacher's aides in at least three aspects:

- Members are much better organized, with clear objectives to provide instructional assistance in school and therefore their efforts are more aligned with teachers' plans
- Because of the consistent presence of Members, there is a sense of continuity for those children served
- Members' instruction assistance is not limited to classroom activities. They also provide after-school enrichment programs. Considerable rapport has been established between Members and students

Results of the teacher survey administered in the third quarter show that 98 percent of 149 remedial students served made greater achievement in academic performance as a result of

AmeriCorps intervention; 82 percent of them showed more positive attitudes toward school; 66 percent had better relationships with adults and peers; 83 percent had higher self-esteem; and 89 percent increased their interest in school work.

Hoquiam. Members at Hoquiam have been engaged in various projects, most of which are construction related. According to the *Occupational Outlook Handbook* (1995), the minimum hourly wage for a construction worker is $18. Even though all the construction work completed by Members so far has met inspection standards, we recognize that Members are new construction workers, and thus we use an average hourly wage of construction laborer ($12.73 per hour) in Washington. According to the description provided by the Washington Employment Security Department, construction laborers usually engage in activities such as digging, lifting, mixing, and cementing.

Through training and first-hand experience, Members at Hoquiam have learned various construction skills such as carpentry, framing, cement work, and roofing. Obviously, skills required of Hoquim Members in constructing the Farmers Market and renovating Hoquiam Stadium are more complicated and refined than what is described for a construction laborer.

The 13 full-time equivalent (FTE) Members will serve at least 22,100 hours (1700 × 13) within one year. Eighteen percent of these hours were dedicated to training and meetings. Therefore the direct service hours of the Hoquiam Project within one year will be 18,122 hours. Using $12.73 as an hourly wage, the number of hours Members will spend on construction work are worth $230,693.

Summary: Members of these two projects provided direct service worth $380,548 ($149,855 at Lake Chelan and $230,693 at Hoquiam).

Value of Members' Commitment to Future Volunteerism

Our survey data show that all Members (15) at Lake Chelan planned to volunteer in their community in the future. When asked what impact their participation in AmeriCorps has had on their commitment to future volunteer work, three indicated "very strong," 10 "strong," and two "not much."

We could assume that the 13 Members (87 percent of 15 Members at Hoquiam) indicated a "very strong" and "strong" commitment to future volunteer work as result of participating in the AmeriCorps Project. But we were concerned with such an assumption for two reasons: 1) Members may have responded to our survey by checking what they thought we expected them to choose and 2) because of the first reason and other possible factors, it was difficult for us to prove that their responses are valid.

Instead, we turned to national data for estimating the percent of Members who will volunteer in the future because of their AmeriCorps experience. According to the Independent Sector and Gallup Organization (1994), 48 percent of Americans volunteered in 1993; the average hours volunteered per week were 4.2; and the average value per volunteer hour is $12.13.

Using the national data as a reference, we assumed 48 percent of the 13 Members will continue to volunteer in the future with or without AmeriCorps experience. Therefore, we concluded that 52 percent of the 13 Members will continue to volunteer in the future due to their AmeriCorps experience. This estimation is conservative because nationally 66 percent of people who have prior volunteer experience continue to volunteer in the future (Independent Sector and Gallup Organization, 1994).

We also assumed that this group of Members will volunteer from age 25 to 65. (Data from the participant enrollment form indicated the average age for this group is 25.) Using a survival rate of .986 and the social discount rate in inflation adjusted terms of .02 and .05 (see Neumann et al., 1995, pp. 16-17), this group of Corps Members will contribute $473,756 at a 2 percent discount rate and $314,792 at a 5 percent rate in volunteer time over the course of their lives.

Hoquiam. Our survey data show that all 14 Members at Hoquiam planned to volunteer in their community in the future. When asked what impact their participation in AmeriCorps has had on their commitment, six of them indicated "very strong," four "strong," and rest "Not much" or "Not at all."

Using the same methods we used for the Lake Chelan Project to put a dollar value on future volunteer work, we assumed that 52 percent of 10 Members who indicated "Very strong" or "Strong" would be unlikely to volunteer if it were not for their AmeriCorps experience. The volunteer time Members at Hoquiam are going to contribute over the course of their lives* is worth $398,218 at a 2 percent discount rate and $245,200 at a 5 percent rate.

Summary: The volunteer time Members of these projects will contribute over the course of their lives is worth $871,974 at a 2 percent discount rate ($473,756 at Lake Chelan and $398,218 at Hoquiam) and $559,992 at a 5 percent ($314,792 at Lake Chelan and $245,200 at Hoquiam).

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* Data from the participant enrollment form indicated the average age for this group is 19. In calculation, 19 to 65 is used as their defined lifetime.

Value of Non-Member Volunteer Time Generated by AmeriCorps Activities

AmeriCorps projects have stimulated other community members to volunteer for AmeriCorps-organized activities. In Lake Chelan, AmeriCorps Members recruited and trained non-Member volunteers and in some cases transported them to schools. In Hoquiam, non-Member volunteers worked with Members on various construction and after-school enrichment activities.

In the first three quarters of 1995, 879 volunteer hours were generated at Lake Chelan because of AmeriCorps. In reviewing quarterly reports, we found that the number of volunteer hours varies from quarter to quarter. This study ignores the number of volunteer hours that may be generated in the fourth quarter and only puts a dollar value on the total number of volunteer hours in the first three quarters. This study also ignores the monetary value of some non-Members who will continue their volunteer work in the future as a result of their AmeriCorps experience.

Eighteen non-Members at Hoquiam volunteered their time in various AmeriCorps activities. In the first three quarters, they volunteered a total of 2,673 hours.

Following the same method used in estimating the value of Members' commitment to future volunteer work, the monetary value of non-Member volunteer hours in the first three quarters is $22,404 ($5,544 at Lake Chelan and $16,860 at Hoquiam).

Summery: The monetary value of hours worked by non-Member volunteers in the first three quarters is $22,404 ($5,544 at Lake Chelan and $16,860 at Hoquiam).

Measuring Benefits to Members

Many skills Members acquire, such as teamwork and citizen participation, are obvious benefits to themselves and society, but are difficult to measure in dollars and so have to be ignored. Other benefits in this category include skills acquired in time management, conflict management, teamwork, planning and assessment, communication, and in working with remedial students, as well as improved self-esteem.

Benefits to Members in this study only include the value of Members' future education assisted through AmeriCorps post-service education awards.

AmeriCorps Post-service Education Award

After serving one year, full-time AmeriCorps Members who serve a minimum of 1,700 hours are eligible for an educational award of $4,725. Part-time Members who serve a minimum of 900 hours are eligible for $2,363. This educational award has to be used within seven years for tuition and fees in a postsecondary institution or to pay existing student loans or both. The educational award is considered a benefit to Members based on

the fact that investment in education has a payoff in the future. However, when such a payoff in terms of increased future earning is attributed to the AmeriCorps educational award, two criteria have to be met.

- Since some people will continue their postsecondary education no matter what, we have to prove that those Members continue their education as a result of their AmeriCorps experience.

- The award has to be used to pay tuition and fees at a postsecondary institution rather than to be used to pay existing student loans. According to the Neumann et al. study (1995), the award when used to pay existing loans is counted as a transfer. In this case, the increased future earnings of a Member due to the educational attainment cannot be attributed to the education award because the education has already been completed.

Measuring Increased Earning of Members Due to the Educational Award

Computing increased earnings of Members due to the educational award involves the following steps.

1. Determining the present value of future earnings by educational level
2. Determining the probability of attaining higher education conditional on the previous educational level
3. Determining the probability of high school dropouts' obtaining a graduate-equivalency diploma (GED) and their increased future earnings when they obtain a GED
4. Determining increased future earnings by educational level
5. Determining increased future earnings of Members of the two projects

Step 1: Determining the present value of future earnings by education level

Computed from the March 1992, Current Population Survey (CPS) Annual Demographics File, Neumann et al. (1995) calculated the present value (in 1995 dollars) of future earnings by educational level using a 2 percent discount rate. Based on the calculation results of Neumann et al., researchers of this study calculated the present value of future earnings by education level using discount rates of both 2 and 5 percent. Table 1 summarizes the present value of future earnings by education level using these discount rates. The dollar amounts are the present value of future earnings of individuals at the educational levels in the left column. For example, a high school dropout will probably earn $370,544 at a 2 percent discount rate and $221,641 at a 5 percent rate in his or her defined lifetime (age 19 to 65).

Table 1
Present Value of Future Earnings by Education Level

	PV of Future Earnings	
Education Level	Discounted at 2%	Discounted at 5%
High School Dropout	$370,544	$221,641
High School Graduate	$504,982	$302,048
Some College	$565,363	$338,166
College Graduate	$705,343	$421,898
Advanced Degree	$795,065	$475,568

Source: Computed from the March 1992 CPS Annual Demographic File

In turning the 1992 CPS data into present value of future earnings by educational level in 1995 dollars, Neumann et al. (1995) and researchers of this study used the following assumptions:

a. Earnings from age 19 to 65 are included.

b. It takes two years to obtain some college, 4 years to attain a college degree, and 6 years to obtain an advanced degree. The number of years spent in a postsecondary institution is deducted from the earning period.

c. Earnings are discounted for the survival rate at .986.

d. Earnings are discounted for the time value of money at the social discount rate in inflation-adjusted terms of 2 percent and 5 percent.

e. Earnings are discounted for labor force participation at a combined male-female rate of 66.2 percent (about 66.2 percent of men and women from age 19 to 65 are in the labor force).

Step 2: Determining probability of attaining higher education conditional on previous education level

Calculated from the March 1992 Current Population Survey Annual Demographics file, Neumann et al. (1995) summarized the probability of attaining a higher education conditional on level attained as shown in Table 2.

Table 2

Probability of Attaining Higher Education Conditional on Educational Level Already Attained

HS Graduates	
Probability of some college	29.4%
Probability of college degree	22.4%
Probability of advanced degree	9.6%
Some College	
Probability of college degree	32.5%
Probability of advanced degree	19.7%
College Degree	
Probability of advanced degree	37.3%

Source: Calculated from the March 1992 CPS Annual Demographic File

Step 3: Determining the probability of high school dropouts to obtain a GED and their increased future earnings when they obtain a GED

Regulations state that every high school dropout who enters AmeriCorps must earn a GED before becoming eligible for an educational award. Following the work of Cameron and Heckman (1993), the attainment of a GED leads to a 6 percent addition in productivity, measured by annual earnings. Cameron and Heckman (1993) also found that about 20.6 percent of high school dropouts would obtained their GED at any event. We therefore assumed that the 79.4 percent of high school dropouts who obtain their GED is attributable to their participation in AmeriCorps.

Step 4: Determining increased future earning by education level

To determine increased future earnings of Members by education level, we had to determine how much impact the AmeriCorps post-service education award had on their decision to continue with their education. To do that, we first had to exclude those who will use the education award to pay existing student loans and then focus on those who will use the award to pay tuition and fees, and then decide how much impact the AmeriCorps experience has had on their decision to continue their education.

Our survey data show that all Members from the two projects plan to continue their education. Two of the 15 Members at Lake Chelan are going to use the education award to pay off existing student loans. Therefore, these two Members were excluded from our calculation of educational benefit. At Hoquiam, all 14 Members plan to use the award to pay tuition and fees at a postsecondary institution.

When asked how much their AmeriCorps experience affected their feelings about continuing their education, 33 percent of the Members at Lake Chelan and 54 percent at Hoquiam indicated "very much," 33 percent at Lake Chalan and 30 percent at Hoquiam "somewhat," and 34 percent at Lake Chelan and 16 percent at Hoquiam either "not much" or "not at all."

We could assume that those who indicated "very much" would not have planned to continue their education if it were not for the AmeriCorps educational award and calculate their increased future earning accordingly But we did not do so for two reasons

- We cannot prove that the responses we collected from the survey are valid
- The number of respondents is too small to generalize as applicable to other AmeriCorps projects

Instead, this study follows Neumann et al. (1995) methodology in determining how much impact the AmeriCorps education award has on a Members' decision to pursue a post-secondary education. In their study, they assigned 10 percent of increased education as the net effect of the AmeriCorps post-service education award, based on studies of the G.I. Bill. Previous studies of the G.I. Bill suggests that educational vouchers increase postsecondary enrollments by 40 percent (see Joint Economic Committee, 1988, Matilla, 1978, and O'Neill, 1977). Compared to the G.I. Bill, the AmeriCorps post-service educational award is available for two years instead four years, and is worth only 50 percent as much in average monthly earnings.

Combining Cameron and Heckman's estimate of high school dropouts getting a GED, the probability of attaining a higher education (see Table 2) and the 10 percent increase in education enrollments because of the education award, we concluded that because of participation in AmeriCorps, a high school dropout who earns a GED will make an additional $17,647 at a 2 percent discount rate and $10,559 at a 5 percent rate over his or her lifetime. The same student with some college will add an additional $9,048 at a 2 percent discount rate to that figure and $5,412 at 5 percent. If the student completes a college degree, he or she can add another $9,075 in lifetime earnings at a 2 percent discount rate and $5,428 at 5 percent. A graduate degree will add $3,347 on top of that figure at a 2 percent discount rate and $2,002 at 5 percent. (See Table 3.)

Table 3
Increased Future Earning By Education Level
Due to Participation in AmeriCorps

Education Level	Increased Future Earnings 2% Discount Rate	5% Discount Rate
HS dropouts	$17,647	$10,559
HS graduates	$9,048	$5,412
Some college	$9,075	$5,428
College graduates	$3,347	$2,002

Step 5: Determining increased future earning of Members of the two projects

As the above table shows, the value of the post-service education award depends on the mix of educational levels of Members when they enter AmeriCorps. Excluding those who are going to use the education award to pay existing student loans, the following table summarizes the distribution of Members of the two projects by education level at entry into AmeriCorps service.

Table 4
Distribution of Members of the Two Projects by Education Level at Entry into AmeriCorps Service
(in percent)

Educational Level at Entry	Lake Chelan	Hoquiam
High school dropout	0	3.9
High school graduate	58.8	76.9
Some college	41.2	19.2
College graduate	0	0.0
Advanced degree	0	0.0
Total percentage	100.0	100.0
Total FTE	8.5	13.0

Based on the increased future earning by education level shown in Table 3 and the distribution of Members by education level shown in Table 4, the total increased future earnings due to the AmeriCorps post-service education award is $77,003 at Lake Chelan and

$122,102 at Hoquiam at the 2 percent discount rate and $46,058 at Lake Chelan and $72,972 at Hoquiam at 5 percent.

Summary: the total increased future earning for Members of the two projects that are due to the AmeriCorps post-service education award will be $199,105 at a 2 percent discount rate ($77,003 at Lake Chelan and $122,102 at Hoquiam) and $119,030 at a 5 percent ($46,058 at Lake Chelan and $72,972 at Hoquiam).

Measuring Costs

Since both projects selected for this study are still underway, actual costs of the two projects for a full-cycle year were not available. This study uses the annual budget, which includes federal dollars and grantees' matched funds. Some costs, such as the educational award, have not occurred yet and may take up to seven years to occur, but they are still included as first-year-operation costs. We also assume all Members will use the educational award.

Local grantees do not have to match federal dollars with hard dollars in every category. In-kind contributions are acceptable to some extent. The Corporation for National Services' statue requires that 25 percent of program costs be matched by grantee organizations, with 15 percent of participant support match costs being met in cash.

Costs occur locally in three major categories:

- Participant support (stipends and fringe benefits, training, education, and educational awards received by AmeriCorps Members)
- Staff costs (for project directors' and their assistants' salaries, fringe benefits, and training)
- Operational costs (for travel, supplies and administration)

In addition, overhead costs from Washington AmeriCorps are allocated to the two projects in this study.

Participant Support

Participant support refers to:

- the costs of training and education for Members
- Corps Members' stipends and fringe benefits (medical insurance and child care)
- costs of educational awards

Staff

Staff costs consist of salaries, fringe benefits, and training provided for the project director and his or her assistant. Costs of staff are typically shared by the AmeriCorps and grantee organizations.

Operational Costs

Operational costs include travel, supplies, and other administration costs.

Overhead Costs from Washington AmeriCorps

Both the Lake Chelan Project and the Hoquiam Project are part of Washington AmeriCorps. Currently, Washington AmeriCorps has 190 FTE working on different projects. A total of $798,000 was budgeted in the first year to provide various services to local projects. This study allocated overhead costs from Washington AmeriCorps to the two projects based on number of FTE each project has.

For the first year of operation, the Lake Chelan Project has received the $160,700 AmeriCorps grant and $43,062 in local matched funds. Overhead costs from Washington AmeriCorps are $42,000. The total cost for the first year is $246,302.

Some of the costs for the Hoquiam Project, such as maintenance and insurance for the Farmers Market, will go beyond the first year of operation. In such a case, costs of maintenance and insurance for the lifetime of the building are included at a discount rate of 2 percent and 5 percent. Such costs are born by the City of Hoquiam. The Hoquiam Project has received the $246,290 AmeriCorps grant with local matched funds of $171,631 at the discount rate of 2 percent and $168,936 at a 5 percent. Overhead costs from Washington AmeriCorps are $54,600.

The following two tables summarize annual budgeted funds provided by the AmeriCorps and local grantee agencies for the two projects of this study.

Table 5
Annual Budget for the Lake Chelan Project

Cost Category	Federal	Grantee
Participant Support		
Training and Education	$1,300	1,650
Participant Stipends	67,548	
Benefits	3,086	
Educational Awards	47,250	
Staff		
Salaries	26,933	8,478
Benefits	7,630	2,543
Training	500	500
Teacher's Monitoring Time		26,880
Operational Cost		
Travel	900	
Supplies	1,500	1,500
Process Checks	900	
Other administration costs	1,653	551
Internal Evaluation and Monitoring	1,500	1,500
Overhead Costs from Washington AmeriCorps	42,000	
Total	$202,700	$43,602
Grand Total	**$246,302**	

Table 6
Annual Budget for the Hoquiam Project

Cost Category	Federal		Grantee	
Participant Support				
Training and Education	$21,500			
Participant Stipends	103,100			
Benefits	14,197			
Educational Awards	59,063			
Staff				
Salaries	10,920		19,168	
Benefits	3,640		5,750	
Training			3,300	
Operational Cost				
Travel	3,000			
Transportation	5,376			
Supplies	8,000		42,532	
Equipment	9,000		10,000	
Administration			3,372	
Maintenance			4,170*	($3271)**
Insurance			8,339*	($6,543)**
Other Operational Costs	8,500			
Overhead costs from Washington AmeriCorps	$54,600			
Total	$300,896		$96,631*	($93939)**
Grand Total	**$397,527***	**($394,802)****		

* indicates that the dollar amount is discounted at 2 percent
** indicates that the dollar amount is discounted at 5 percent

BENEFIT-AND-COST RATIO

In conducting this study, it was necessary to determine how a dollar spent on the projects would compare to a dollar invested in an interest-bearing account. We used both a 2 percent discount rate (the real rate of return beyond inflation) and, for balance, a more conservative 5 percent discount rate. Thus the money invested in an AmeriCorps project is compared to money invested in an account paying 2 percent and 5 percent over a fixed number of years.

Using this approach, we found that the average benefit-and-cost ratios across the two projects are 2 4-to-1 at a 2 percent discount rate and 1 8-to-1 at a 5 percent. In other words, *for every dollar (federal and matched) spent on these AmeriCorps projects, $2.40 can be expected in return at a 2 percent discount rate, and $1.80 at a 5 percent.*

Looking at benefit and cost ratios separately for each project, we found that the Lake Chelan Project has higher cost-and benefit-ratios than the Hoquiam Project at both discount rates. Table 7 summarizes cost-and benefit-ratios separately for each project at a 2 percent discount rate and a 5 percent

Table 7
Benefit-Cost Ratios for Two AmeriCorps Projects

	Lake Chelan Project		Hoquiam Project	
	2%	5%	2%	5%
Benefits	$706,158	$516,249	$767,873	$565,725
Federal	$202,700		$300,896	$300,896
Costs grantee	$43,062		$96,631	$93,939
Total costs	$246,302		$397,527	$394,802
Benefit-cost ratio	2.9	2.1	1.9	1.4

CONCLUSIONS AND RECOMMENDATIONS

In this study, we have encountered uncertainties in determining what benefits should be included in our calculation. We have attempted to deal with these uncertainties by being generous in including various costs, and conservative in computing benefits with two discount rates. In calculating cost, unlike the Neumann et al. study, we used both federal and local expenditures. Despite this very conservative approach, the benefit-cost ratios of the two projects range from 2.4 using a 2 percent discount rate to 1.8 using a 5 percent rate. That is, we have measured benefits to be $1.8 to $2.4 per dollar of federal and local outlay.

Moreover, these measured benefits are understated because of a lack of information and because of the impossibility of measuring some non-monetary benefits. The benefits that could have been measured with more information include (1) increased future earnings of service recipients at-risk students in the Lake Chelan project, (2) a reduction in social costs to the extent that students who served in the program are less likely to engage in crime or other activities that adversely affect society in the Lake Chelan project, (3) the future benefit to Members of earned teaching skills in the Lake Chelan project, and (4) the future benefit from non-Members' voluntary work initiated from the AmeriCorps projects in both projects.

The benefits that obviously exist but cannot be measured include the benefits to society due to the increased number of citizens who have socially desirable attitudes, such as teamwork skills and citizen participation; and the benefit to Members in the form of increased self-esteem, pride in accomplishment, interdependence, and entrepreneurship. Although our study uses more direct than indirect data from other studies, it still falls short in terms of satisfactory data collection. We will calculate more accurate benefits and costs if more detailed and complete data and information are available in the future. Even working with less than desirable data and using very conservative approaches, our findings suggest that the economic benefit of both projects is substantially more than the costs.

We believe a cost-benefit analysis is only one of many strategies that should be used in evaluating AmeriCorps projects. Its reliance on dollar values prevents this strategy from showing many important short- and long-term outcomes. Other strategies—describing and analyzing programs through case studies, a formative evaluation to determine ways to improve programs, and summative evaluations to determine how well programs meet their objectives and impact Corps Members and the communities they serve—would provide staff, funders, and interested community members with a more complete picture of the programs and their accomplishments.

For next year, we recommend that assumptions and methodologies developed in this study be expanded to cost-benefit studies of other AmeriCorps projects. Studies might be made

of a sample of each of four types (environmental, public service, human needs, and public safety) of AmeriCorps projects as one part of a more comprehensive evaluation. We also recommend a follow-up study to test some of the assumptions made in this pilot study regarding the percentage of Members who actually enroll in educational institutions and who continue in volunteer service after completing their AmeriCorps one-year commitment.

Appendix
CALCULATION PROCEDURES

Calculations Used in Table 3

For High School Dropouts

2% discount rate:

Present value of the future earnings of High School Dropouts from Table 1	$370,544.00
× Percentage increase in earnings due to uptaining a GED	× 0.06
× Portion of the increase attributible to participation in AmeriCorps	× 0.794
Equals	= $17,647.00

5% discount rate:

Present value of the future earnings of High School Dropouts from Table 1	$221,641.00
× Percentage increase in earnings due to obtaining a GED	× 0.06
× Portion of the increase attributible to participation in AmeriCorps	× 0.794
Equals	= $10,559.00

For High School Graduates

2% discount rate:

Present value of the future earnings of Some College from Table 1	$565,363.00
× Probability of attaining Some College for High School Graduate from Table 2	× 0.294
× Increased probability of attaining Some College due to the education voucher	× 0.10
Subtotal	+ $16,621.67
+ Present value of future earnings of College Graduates from Table 1	$705,343.00
× Probability of attaining College Graduate for High School Graduate from Table 2	× .224
× Increased probability of attaining College Graduate due to the education voucher	× .10
Subtotal	+ $15,799.68
+ Present value of future earnings of Advanced Degree from Table 1	$795,065.00
× Probability of attaining Advanced Degree for High School Graduate from Table 2	× .096
× Increased probability of attaining Advanced Degree due to the education voucher	× .10
Subtotal	+ $7,632.62
– Present value of future earnings of High School Degree from Table 1	$504,982.00
× Increased probability of attaining higher education due to the education voucher (0.294 × 0.1 + 0.224 × 0.1 + 0.096 × 0.1)	× .0614
Subtotal	– $31,005.89
Total	$9,048.00

For High School Graduates (continued)

5 % discount rate:

Present value of the future earnings of Some College from Table 1	$338,166.00
× Probability of attaining Some College for High School Graduate from Table 2	× 0.294
× Increased probability of attaining Some College due to the education voucher	× 0.10
Subtotal	+ $9,942.08
+ Present value of future earnings of College Graduates from Table 1	$421,898.00
× Probability of attaining College Graduate for High School Graduate from Table 2	× .224
× Increased probability of attaining College Graduate due to the education voucher	× 10
Subtotal	+ $9,450.52
+ Present value of future earnings of Advanced Degree from Table 1	$475,568.00
× Probability of attaining Advanced Degree for High School Graduate from Table 2	× .096
× Increased probability of attaining Advanced Degree due to the education voucher	× .10
Subtotal	+ $4,565.45
– Present value of future earnings of High School Degree from Table 1	$302,048.00
× Increased probability of attaining higher education due to the education voucher (0.294 × 0.1 + 0.224 × 0.1 + 0.096 × 0.1)	
× 0614	
Subtotal	– $18,545.75
Total	$5,412.00

For Some College

2% discount rate:

($705,343 × 0.325 × 0.1) + ($795,065 × 0.197 × 0.1)
– [$565,363 × (0.325 × 0.1 + 0.197 × 0.1)] = $9,075.00

5% discount rate:

($421,898 × 0.325 × 0.1) + ($475,568 × 0.197 × 0.1)
– [$338,166 × (0.325 × 0.1 + 0.197 × 0.1)] = $5,428.00

For College Graduates

2% discount rate:

($795,065 × 0.373 × 0.1) – ($705,343 × 0.373 × 0.1) = $3,347.00

5% discount rate:

($475,568 × 0.373 × 0.1) – ($421,898 × 0.373 × 0.1) = $2,002.00

Calculation of the Increased Earning of Members Due to the Educational Award

Lake Chelan Project

2% discount rate:

($9,048 [increased future earnings of High School Graduates from Table 3] × 0.5882 [portion of High School Graduates of AmeriCorps Members in Lake Chelan project]) + ($9,075 [increased future earnings of Some College from Table 3] × 0.4118 [portion of Some College of AmeriCorps Members in Lake Chelan project] × 8.5 FTE]) = $77,003

5% discount rate:

($5,412 × 0.5882) + ($5,428 × 0.4118) × 8.5 FTE = $46,058

Hoquiam Project

2% discount rate:

($17,647[increased future earnings of High School Dropouts in Table 3] × 0.0385 [portion of High School Dropouts of AmeriCorps Members in Hoquiam project] + ($9,048 [increased future earnings of High School Graduates in Table 3] × 0.7692 [portion of High School Graduates of AmeriCorps Members in Hoquiam project] + ($9,075 [increased future earnings of Some College in Table 3] × 0.1923 [portion of Some College of AmeriCorps Members in Hoquiam] × 13 FTE = $122,102

5 % discount rate:

($10,559 × 0.0385) + ($5,412 × 0.7692) + ($5,428 × 0.1923) × 13 FTE = $72,972

Calculation of the Value of Services Provided by Members

Lake Chelan Project

21,500 (total hours served by Members) × (1 – 0.18 [portion used in membership development or meetings]) × $8.5 hourly wage = $149,855

Hoquiam Project

22,100 (total hours served by Members) × (1 – 0.18) × $12.73 = $230,693

Calculation of the Value of Members' Committment to Future Volunteerism

Lake Chelan Project

4.2 (average hours volunteered per week) × 50 (weeks) × 1 – 0.48 (portion of Americans volunteer work) = 0.52: portion of contribution by AmeriCorps experience × 13 Members × $12.13 hourly wage = $17,220 per year. Thus, lifetime benefits will be $473,756 at a 2% discount rate and $305,910 at a 5% discount rate.

Hoquiam Project

4.2 × 50 × (1 – 0.48) × 10 (FTE) × $12.13 = $13,246 per year. Thus, lifetime benefits will be $398,218 at a 2% discount rate and $245,200 at a 5 % discount rate.

Calculation of the Value of Non-Members' Volunteer Time Generated by AmeriCorps Activities

Lake Chelan Project

879 (total hours served by non-members) × (1 – 0.48) × $12.13 = $5,544

Hoquiam Project

2,673 × (1 – 0.48) × $12.13 = $16,860

Total Benefits

Lake Chelan Project

2% discount rate: $77,003 + $149,855 + $473,756 + $5,544 = $706,158

5% discount rate: $46,058 + $149,855 + $314,792 + $5,544 = $516,249

Hoquiam Project

2% discount rate: $122,102 + $230,693 + $398,218 + $16,860 = $767,873

5% discount rate: $72,972 + $230,693 + $245,200 + $16,860 = $565,725

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